

WHAT IS CLAIMED IS:

1. A method for manufacturing a liquid jet recording head which comprises an element substrate provided with a plurality of discharge energy generating elements for applying discharging energy to a recording liquid in accordance with image data, a liquid chamber for storing the recording liquid, and a top plate having a plurality of nozzles and which is formed by jointing the element substrate and the top plate so that each of the discharge energy generating elements faces the respective nozzle, the method comprising:

a step of forming, on an anisotropic-etching mask layer provided on a nozzle surface of the top plate, compensation patterns extending to a liquid chamber region in order to form the nozzles and the liquid chamber by anisotropic etching; and

a step of performing anisotropic etching of the top plate through the mask layer and forming the liquid chamber to have a substantially rectangular shape at the nozzle surface of the top plate by over-etching portions with the compensation patterns.

2. A method for manufacturing a liquid jet recording head according to Claim 1, wherein the top plate comprises a

silicon wafer having a $\langle 110 \rangle$ oriented surface.

3. A method for manufacturing a liquid jet recording head according to one of claims 1 and 2, wherein the compensation patterns are comb-shaped and are arranged to oppose each other so as to define a ladder-shaped opening region between the compensation patterns at the center portion of the liquid chamber region.

4. A method for manufacturing a liquid jet recording head according to one of claims 1 and 2, wherein the compensation patterns are arranged to oppose each other so as to define a substantially H-shaped opening region between the compensation patterns at the center portion of the liquid chamber region.

5. A method for manufacturing a liquid jet recording head according to one of claims 1 and 2, wherein each of the compensation patterns is designed by combining at least one line having an angle of 55° relative to a $\langle 111 \rangle$ plane in the nozzle direction of the silicon wafer and at least one line having an angle of 71° relative to the same $\langle 111 \rangle$ plane, and the compensation patterns are arranged to oppose each other separated by an opening region in the center portion of the liquid chamber region.

6. A method for manufacturing a liquid jet recording head according to one of claims 1 and 2, wherein each of the compensation patterns is designed by combining at least one line having an angle of 55° relative to a $\langle 111 \rangle$ plane in the nozzle direction of the silicon wafer, at least one line having an angle of 71° relative to the same $\langle 111 \rangle$ plane, and at least one line parallel to the nozzle arraying direction, and the compensation patterns are arranged to oppose each other separated by an opening region in the center portion of the liquid chamber region.